ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 6, Issue – 3, June - 2023, Page No. : 294 - 299

Surgical management of a rare case of penile fracture with urethral rupture: A Case Report

[1]Dr. Mukesh Pancholi, Head of Department, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India – 390001

[2]Dr. Digant Patel, Assistant Professor, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India - 390001

[2]Dr. Jagrut Patel, Assistant Professor, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India - 390001

[3]Dr. Rishabh Handa, Assistant Professor, Department of Urology, SSG Hospital, Vadodara, Gujarat, India - 390001

[4]Dr. Prerna Razdan, Resident, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India - 390001

[4]Dr. Manisha Devnan, Resident, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India - 390001

Corresponding Author: Dr. Prerna Razdan, Resident, Department of General Surgery, SSG Hospital, Vadodara, Gujarat, India – 390001.

How to citation this article: Dr. Mukesh Pancholi, Dr. Digant Patel, Dr. Jagrut Patel, Dr. Rishabh Handa, Dr. Prerna Razdan, Dr. Manisha Devnan, "Surgical management of a rare case of penile fracture with urethral rupture: A Case Report", IJMACR- June - 2023, Volume – 6, Issue - 3, P. No. 294 – 299.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Penile fractures are a rare urological emergency. It occurs due to rupture of tunica albuginea of corpora cavernosa as a result of trauma to the erect penis. It is most caused during sexual intercourse and masturbation. It is characterized by a sudden cracking or a popping sound followed by rapid detumescence, swelling, widespread ecchymosis, severe pain, and discoloration of the penis. Prompt diagnosis and surgical intervention without delay are important to warrant a successful outcome. We hereby report a case of a young male with penile fracture and describe its presentation and management. A case of 27-year-old male presented to the emergency department with complaints of pain, swelling, eggplant deformity of the penis and bleeding from the meatus during sexual activity. Penile fracture, a relatively rare condition, occurs due to disruption of the tunica albuginea of the corpus cavernosum caused by trauma to the erect penis. Ultrasonography (USG) is the preferred imaging method to establish the diagnosis and identify location of the injury and an associated urethral laceration. Immediate surgical exploration and repair is the recognized approach for treating penile fracture. Penile fracture is a rare urological emergency that requires surgical intervention. In our case, surgical penile fracture repair and urethroplasty were performed leading to a

successful recovery, without any complications. This case report is intended to assist surgeons in handling such rare emergency conditions.

Keywords: Penile Shaft Fracture, Surgical Repair, Urethral Tear, Urological Emergency.

Introduction

Penile fractures are an uncommon urological emergency with an incidence of 1 in 1,75,000 males. It occurs due to rupture of the tunica albuginea, a fibrous sheath that covers the two corpora cavernosa, as a result of trauma to the erect penis. Such cases of penile injuries are underreported as patients do not seek medical attention due to fear and embarrassment. Its true incidence in India is not known due lack of reporting of such cases to the concerned departments. It occurs most frequently during sexual intercourse and masturbation, and rarely due to direct blunt trauma to the penis, straddle injury, being kicked over penile region. Penile fractures in children may occur due to falling of the toilet seat over the penis while voiding ("the toilet seat syndrome"). Penile fractures can have an associated urethral injury in about 10-33% of cases manifesting as dysuria, haematuria, or blood at tip of the meatus [1, 2, 3].

It is characterized by a sudden cracking or popping sound followed by rapid detumescence, swelling, widespread ecchymosis, severe pain, and discoloration of the penis [4].

This condition can be diagnosed after proper history taking and physical examination. Additional imaging procedures such as ultrasound may be required to determine the location and extent of severity of the rupture. Prompt diagnosis and surgical intervention without delay are important to warrant a successful outcome [5,6].

We hereby report a case of a young male with penile fracture and urethral rupture and describe its presentation and management.

Case Report

A 27-year-old male presented to the emergency department with complaints of sudden onset sharp pain, swelling and a deformed ("eggplant like") penis along with bleeding. He reported approximately 3 hours after suffering penile injury during sexual intercourse. It was not accompanied by any popping/cracking sound. He was able to pass urine stained with blood, with no other complaints.

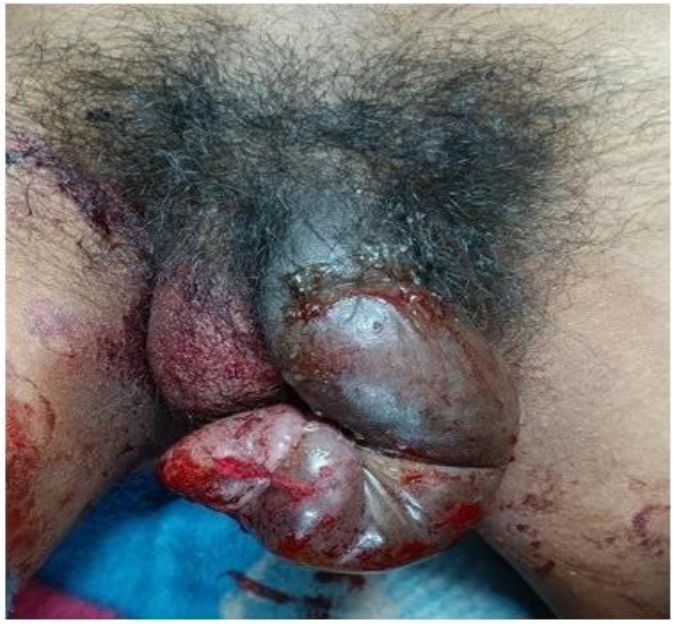


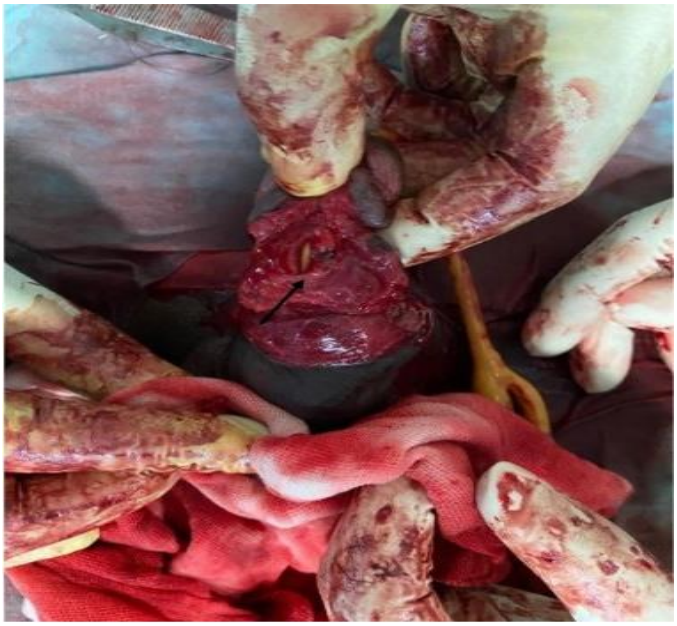
Fig 1: Patient's penis at presentation to emergency dept.

Patient was vitally stable. On physical examination, his penis was deformed, oedematous, and tender along with blood present at the tip of the meatus. Scrotum and base of the penis appeared normal. Haematuria was present.

All routine blood investigations were done. X ray PBH (pelvis and bilateral hips) and Xray KUB (kidney, ureter and bladder) were done which were normal. USG local part (penis) was suggestive of

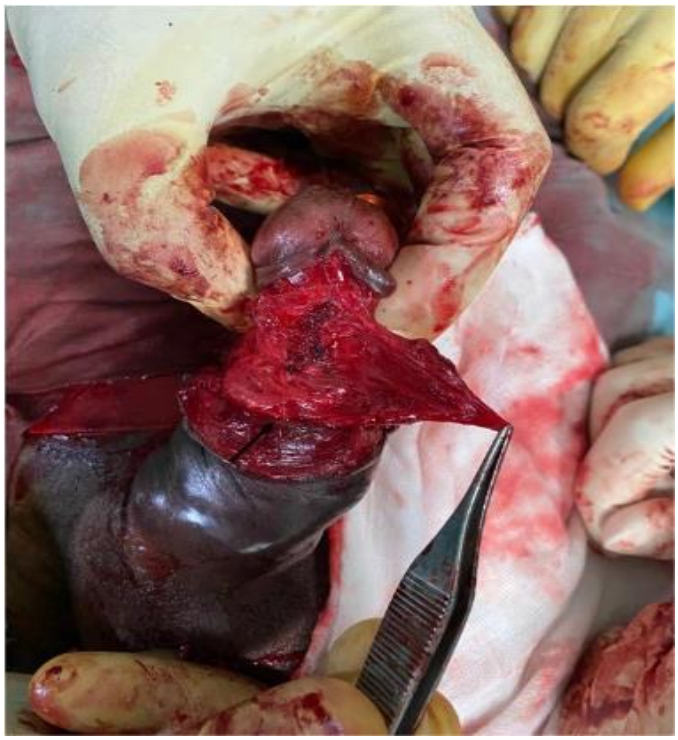
penile hematoma in view of history of penile trauma.

Patient was taken up for surgical exploration and repair. A per urethral guide wire was passed and catheterization was done with 16Fr Foley's catheter which was palpable in subcutaneous space 2cm below the corona. A swelling resent just below the glans, on compression, led to the splashing of a jet of fresh blood suggesting a ruptured urethra with fistula. A circumferential degloving incision was made at the muco-cutaneous junction and a haematoma on the ventral aspect was drained. An approximately 2cmx1cm vertical defect was present over the corpus spongiosum which was repaired using a 4-0 vicryl interrupted suturing technique in two layers. Extra reputial skin was cut and sutured using a 3-0 monocryl suture in an interrupted manner. Dressing with neomycin ointment and jelonet was applied with an indwelling catheter in situ.



Arrow indicates vertical rupture of urethra with catheter visible

Fig 2: Ventral defect of 2cmx1cm over corpora spongiosum



Arrow indicates rent in the corpora spongiosum

Fig 3: Ventral defect repaired using 4-0 vicryl sutures in two layers in interrupted manner.

The patient was put under the cover of antibiotics and a 5- day course of Tab. Norethisterone (5mg one tab at night) to prevent infections and painful erections, respectively.

Post op Day 1 patient was vitally stable with complaint of mild pain over the penile region with dressing in situ. The dressing was changed on post op Day-3 and Norethisterone was discontinued on day 5. The patient was discharged on post op Day 8 with no complaints of localized pain or painful erections, with an indwelling catheter to be removed after 21 days, and under antibiotic coverage. The patient was asked to abstain from any sexual activity for 4-6 weeks and come for a follow up visit after a week.

Fig 4: Repaired fracture of penis on POD-3

Fig 5. POD-8 (day of discharge)

Discussion

Penile fracture, a relatively rare condition, occurs as a result of disruption of tunica albuginea of the corpus cavernosum caused by trauma to the erect penis. The thickness of tunica albuginea may reduce from about 2mm to 0.5/0.25mm at the time of erection, thus making it more prone to fractures. It may occur in isolation or with urethral tear [2, 3, 7]. In our case, after careful physical examination and history from the patient, he was diagnosed with a penile fracture along with a vertical urethral rupture which was discovered intraoperatively. Usually, such fractures are reported much less commonly than they occur as patients are reluctant to seek medical attention due to the nature and mechanism of injury.

Patients may feel embarrassed, or simply due to lack of guidance end up delaying reporting the condition [1].

Most commonly, it is caused during sexual intercourse and while masturbating (90% of the cases). Other causes include direct trauma to the penis, rolling over in bed, being kicked during a fight, falling of the toilet seat over the penis, straddle injury, etc. The rupture can occur anywhere along the corpora and produce different swelling patterns, but generally, the lateral side of the distal two thirds of the corpora is the commonest site of rupture [8]. Usually, unilateral fracture of corpora cavernosum occurs, although bilateral injury or that involving the spongiosum along with the urethral rupture can also occur, latter being the case in our patient. Penile fractures can be readily diagnosed based on history and physical examination. In such cases, the patient generally reports a cracking or popping sound in the erect penis, followed by rapid detumescence and severe pain [9]. In our case, the patient confirmed that no popping sound was heard when he faced trauma to his erect penis with him being on top position during sexual intercourse.

Vigorous sexual activity, or penile manipulation during intercourse, especially vaginal intercourse is commonly implicated to be the cause of trauma to the penis. As was the case in our patient, vigorous sexual activity in absence of adequate lubrication and hitting of the penis directly to the pelvis of the female caused trauma to the corpus spongiosum and also resulted in an associated urethral laceration.

If the results from history and physical examination are ambiguous, ultrasonography is the preferred imaging method to establish the diagnosis and identify the location of the injury and an associated urethral laceration.

Ultrasonography is non-invasive, readily available, accurate, and inexpensive. To confirm a urethral injury, a retrograde urethrogram (RGU) can be done to identify the site of injury and plan surgical repair accordingly [10, 11].

As per recent literature and case reports, immediate surgical exploration and repair are the standard approach for treating penile fractures. Although conservative management for minor tears in the form of compressive bandages, splints, indwelling catheter, and antibiotic coverage has been tried in the past, chances of complications are much higher especially with urethra being involved. Operative management reduces the risk of complications of fracture like skin necrosis, chordee, cavernous fibrosis, decreased turgidity of erection, pseudo diverticulum, penile deformity, painful erections, and impotence [3]. In our case, surgical penile fracture repair and urethroplasty were done. The outcome was favourable, without any complications noted on follow-up.

Conclusion

Penile fracture is a rare urological emergency that requires surgical intervention. Ultrasonography helps in establishing the diagnosis and identifying the location of the injury along with an RGU for localizing an associated urethral laceration. In our case, the patient was successfully diagnosed with penile fracture and urethral rupture using the results from an ultrasonography imaging study and history/physical examination. Consequently, surgical penile fracture repair and urethroplasty were performed leading to a successful recovery, without any complications. This case report is intended to assist surgeons in handling such rare emergency conditions.

Consent: Consent has been taken from the patient.

Author's Contribution: All authors contributed equally in diagnosis, management and follow-up of the patient and in compilation of the case report.

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